

REMARKS

This Amendment is filed in response to the Office Action mailed July 16, 2007. The Applicant respectfully requests reconsideration. The objections and rejections are respectfully traversed.

Claims 1-24 are pending in the case.

No claims have been amended.

No claims have been added.

Specification

At paragraphs 15-16 of the Final Office Action, the Examiner comments that “the trademark Cisco Systems has been noted on page 13 and 14 in the application” and requests it be accompanied by generic terminology.

The Applicant respectfully requests this be reconsidered. The Applicant refers to the corporation name “Cisco Systems, Inc.” on pages 13 and 14 of the specification. Referring to a corporation by name is quite different than using a term as a trademark. As such, the Applicant urges that the specification’s wording is proper.

Claim Rejections - 35 U.S.C. §101

At paragraph 17-18 of the Final Office Action, claims 18-23 were rejected under 35 U.S.C. §101.

The Applicant respectfully requests reconsideration of this rejection. MPEP §2106.01(I) discusses computer listings *per se* and reads in part (emphasis added):

Computer programs are often recited as part of a claim. ***USPTO personnel should determine whether the computer program is being claimed as part of an otherwise statutory manufacture or machine. In such a case, the claim remains statutory irrespective of the fact that a computer program is included in the claim.*** The same result occurs when a computer program is used in a computerized process where the computer executes the instructions set forth in the computer program. ***Only when the claimed invention taken as a whole is directed to a mere program***

listing, i.e., to only its description or expression, is it descriptive material per se and hence nonstatutory.

The Applicant's claims are directed as a whole to statutory machines or manufactures, and not only to computer programs as listings. Claim 18, representative in part of claims 18-23, reads:

18. An apparatus that implements port-based network access control at a shared media port, the shared media port being coupled to a plurality of client nodes, the apparatus comprising:

means for partitioning the shared media port into a plurality of logical subinterfaces, each logical subinterface dedicated to providing access to a different network or subnetwork accessible through the intermediate node;

means for receiving a data packet at the shared media port from a first client node;

means for associating the received data packet with a first logical subinterface in the plurality of logical subinterfaces;

means for determining whether the first client node is authenticated to communicate over the first logical subinterface's dedicated network or subnetwork; and

means for forwarding the received data packet over the first logical subinterface's dedicated network or subnetwork.

The claimed *apparatus* includes *means for receiving a data packet at the shared media port from a first client node* and *means for forwarding the received data packet over the first logical subinterface's dedicated network or subnetwork*, each means having corresponding structure that includes tangible hardware.

The Applicant respectfully directs the Examiner's attention to page 13, lines 12-24 of the specification which (among other portions of the specification) recites structures corresponding to the means of receiving and means for forwarding. Page 12, lines 12-24 read (emphasis added):

The ports 300 and 260 are typically resident on one or more network interface cards (NIC) in the intermediate node 200, wherein each NIC is assigned a unique media access control (MAC) address. The port

260 comprises the mechanical, electrical and signaling circuitry that enables the intermediate node 200 to communicate over a, e.g., point-to-point link, Ethernet link, optical link, wireless link or other physical link, coupled to the Internet 150. In contrast, **the shared media port 300 provides the mechanical, electrical and signaling circuitry that enables the node 200 to communicate over one or more physical links coupled to a plurality of client nodes 110. For example, the port 300 may include an integrated hub or switch or may be attached to a “downstream” hub or switch in the home LAN 140.** Each port 300 and 260 is typically associated with a different network configuration. For instance, the ports may be associated with different IP configurations, virtual local area network (VLAN) configurations, authentication protocols and so forth.

Accordingly, as these means plus function elements have corresponding structure that includes tangible hardware, the claim as a whole is not directed to only computer programs per se. Accordingly, the Applicant respectfully urges that the claims satisfy the requirements of 35 U.S.C. §101 in light of the guidance provided by MPEP §2106.01(I).

Claim Rejections - 35 U.S.C. §102

At paragraphs 20-25 of the Final Office Action, claims 1-4, 14, 18, and 24 were rejected under 35 U.S.C. §102(e) over Roese, U.S. Patent Application No. 2004/0158735 (hereinafter Roese).

The Applicant's claim 1, representative in part of the other rejected claims, sets forth:

1. A method for implementing port-based network access control at a shared media port in an intermediate node, the shared media port being coupled to a plurality of client nodes, the method comprising:
partitioning the shared media port into a plurality of logical sub-interfaces, each logical subinterface dedicated to providing access to a different network or subnetwork accessible through the intermediate node;
receiving a data packet at the shared media port from a first client node;
associating the received data packet with a first logical subinterface in the plurality of logical subinterfaces;

determining whether the first client node is authenticated to communicate over the first logical subinterface's dedicated network or subnetwork; and

if the first client node is determined to be authenticated to communicate over the first logical subinterface's dedicated network or subnetwork, forwarding the received data packet over the first logical subinterface's dedicated network or subnetwork.

Roese discusses a port-based authentication scheme that follows the IEEE 802.1X standard. A function (i.e. a device) is connected to "network access port" of a "network infrastructure device." See paragraphs 0011. The "network access port" is associated with a "logical controlled port" and a "logical uncontrolled port." See paragraphs 0011 and 0012. If an attached function (i.e., device) is not authenticated, it may only communicate through the uncontrolled logical port. Upon authentication of the attached function (i.e., device), the logical controlled port is enabled for use. See paragraph 0012. Thus, in effect, the network access port has two states, one where the logical uncontrolled port is used (i.e. an uncontrolled state), and one where the logical controlled is used (i.e. a controlled state) See paragraphs 0012 and 0015.

The Applicant respectfully urges that Roese is silent concerning Applicants claimed *"partitioning the shared media port into a plurality of logical subinterfaces each logical subinterface dedicated to providing access to a different network or sub-network accessible through the intermediate node"* and *"associating the received data packet with a first logical subinterface in the plurality of logical subinterfaces"* and *"determining whether the first client node is authenticated to communicate over the first logical subinterface's dedicated network or subnetwork."*

While the Applicant claims *"partitioning the shared media port into a plurality of logical subinterfaces"* and associating and determining to provide access control at the subinterface level, Roese simply discusses the IEEE 802.1X standard which manages access control at the port level. That is, in Roese a network access port has in effect two states, one where the logical uncontrolled port is used (i.e. an uncontrolled state), and one

where the logical controlled is used (i.e. a controlled state) *See* Roese paragraphs 0012 and 0015.

Operating at the port level may lead to a number of network security problems as discussed by the Applicant in the background section of the Application. For example the Applicant discusses at page 6, lines 9-22.

Network security problems often arise when both authorized and unauthorized users communicate through a shared media port that is configured to perform port-based network access control, such as 802.1X authentication. As noted, the shared media port transitions from an unauthorized to an authorized state once a user is authenticated at the port. ***Consequently, unauthenticated users at client nodes coupled to the shared media port may gain unauthorized access to the intermediate node's services as soon as a user is authenticated at another client node coupled to that port.*** In this situation, network security may be compromised by the unauthenticated users coupled to the authorized port....***Unfortunately, the IEEE 802.1X standard does not address the possibility of such security breaches at shared media ports.***

The Applicant, in part, addresses the shortcoming of techniques such as those discussed in Roese by “***associating the received data packet with a first logical subinterface in the plurality of logical subinterfaces***” and “***determining whether the first client node is authenticated to communicate over the first logical subinterface's dedicated network or subnetwork.***” In this manner, access control may be provided on with a finer granularity for a subinterface.

Accordingly, the Applicant respectfully urges that Roese is legally insufficient to anticipate the present claims under 35 U.S.C. §102 because of the absence of the Applicant's claimed novel “***partitioning the shared media port into a plurality of logical subinterfaces each logical subinterface dedicated to providing access to a different network or subnetwork accessible through the intermediate node***” and “***associating the received data packet with a first logical subinterface in the plurality of logical subinter-***

faces” and “determining whether the first client node is authenticated to communicate over the first logical subinterface’s dedicated network or subnetwork.”

Claim Rejections - 35 U.S.C. §103

At paragraphs 26-40 of the Final Office Action, claims 15, 8, 9, 11, 13, 15 17, 19 and 21-23 were rejected under 35 U.S.C. §103(a) over Roese in view of Kwan et al., U.S. Patent Application No. 2005/0055570 (hereinafter Kwan).

At paragraphs 41-47 of the Final Office Action, claims 6 and 10 were rejected under 35 U.S.C. §103(a) over Roese in view of Kwan, in further view of Ng. et al., U.S. Patent Application No. 2005/0177865 (hereinafter Ng).

At paragraphs 48-51 of the Final Office Action, claims 7, 16 and 20 were rejected under 35 U.S.C. §103(a) over Roese in view of Haverinen et al., U.S. Patent Application No. 2004/0208151 (hereinafter Haverinen).

At paragraphs 52-55 of the Final Office Action, claim 12 was rejected under 35 U.S.C. §103(a) over Roese in view Kwan and in further view of Inoue et al., U.S. Patent No. 6,891,819 (hereinafter Inoue).


The Applicant notes that all of the claims rejected under U.S.C. §103 are dependent claims which depended from independent claims believed to be allowable. Accordingly, the dependent claims are also believed to be allowable for at least this reason as well as for other separate reasons.

Should the Examiner believe telephonic contact would be helpful in the disposition of this Application, the Examiner is encouraged to call the undersigned attorney at (617) 951-2500.

In summary, all the independent claims are believed to be in condition for allowance and therefore all dependent claims that depend there from are believed to be in condition for allowance. The Applicant respectfully solicits favorable action.

Please charge any additional fee occasioned by this paper to our Deposit Account
No. 03-1237.

Respectfully submitted,


James A. Blanchette
Reg. No. 51,477
CESARI AND MCKENNA, LLP
88 Black Falcon Avenue
Boston, MA 02210-2414
(617) 951-2500